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THE ELEMENTARY SCHOOL TEACHER

APRIL, 1912

THIRD-GRADE HISTORY WORK IN FRANCIS W. PARKER SCHOOL

PEARL BACKUS CARLEY
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The children of the third grade have studied the history of the growth of Chicago. It is most interesting to take up the study of Chicago chronologically, and to place the pupils in the life and movement of the period they are studying. The stories of Indians, fur traders, pioneers, transportation, the early industries, and various simple civic problems having picturesque aspects, appeal to children through a natural interest. These stories become a vital part of the life and experience of each child. The contrasts between the lives of people who lived here fifty to a hundred years ago, and their own, helps them to appreciate their own environment and comforts. Chicago is so young that there are people still living who can tell personal experiences of the early days, and these, with visits to historical spots and museums, make the study more real and vivid. The purpose is not to teach events only, but to show reasons for the beginning of the city; its connection geographically, historically, and commercially with the rest of the country—the interdependence, in general, between the city and the surrounding country. To have children image the landscape, not the map, many excursions to type areas—as the swamps and sand dunes—are necessary. This also enables them to think of conditions around Chicago as they existed long ago. It is essential to make a study of some of the organized civic activities of the present day,

to emphasize the beginnings, the growth, and the reasons for instituting them.

The children write their own histories of Chicago. Each child has reprints of thirty or forty pictures which the teacher has collected from every possible source to illustrate this work. Covers are made for the books, and they are simply and artistically bound. The motive of making a book, which is to be both complete and beautiful, appeals very strongly to all of them.

The plan for a series of twenty lessons on Pioneer Transportation, included in this article, was worked out by Miss Beatrice Topping, under Mrs. Carley's supervision. Pictures illustrating this part of the story were drawn by Miss Topping.

The topical outline given below will give some idea of the contents of each child's book. These topics are so closely correlated that it is difficult to classify them under different subject heads. But they have been placed under History, Science, and Geography, according to their significance in the Story of Chicago.

HISTORY

How Chicago Looked a Hundred Years Ago

Stories of Indians

Indian's Dress

Indian Homes

Wigwam

Summer Home

Winter Home

Indian Village along Creek Where State St. Is Now

Industries

Basketry

Pottery Making

Weaving Rush Mats

Weaving Blankets

Cooking

How Indians Gather Wild Rice

Indian Games

Hunting and Fishing Devices

Elk Hunting

Buffalo Hunting

Hunting Buffalo with Decoys

Antelope Hunting

Hunting Deer with Decoys

Hunting Bears
Bear Dance
Snow-Shoe Dance
Trapping Animals
Fishing with Soap Root
Fishing with Bow and Arrow
Spearing Fish—Weirs
Picture Writing
Building Canoes
 Indians in Lincoln Park
Building Fort Dearborn
Plan of Fort Dearborn
Mr. Kinzie Comes to Chicago
The Kinzie Mansion
Fur Trading
Stories of Trappers
Stories of French Voyageurs
How Chicago Looked in 1812
 Tecumseh
 Revolutionary War
 War of 1812
 First Indian Trouble
 Massacre of Fort Dearborn
 Black Partridge
 Captain Wm. W. Wells
After War of 1812
Fort Dearborn Rebuilt
Government Bought Land for Canal
Coming of Settlers; How They Traveled; Traveling with: Ox-Carts; Sledges;
 Prairie Schooners; Flatboats; Packhorses
Abraham Lincoln Traveling to Illinois; his Trip on Flatboat down Missis-
 sippi River
Mr. and Mrs. Kinzie's Traveling Experiences
How Chicago Looked in 1831
Old-fashioned Fireplace: Cooking
River Water
Wells and Sweeps
Selling Water from Cart
Water System: Log Pipes
First City Water Works
Second City Water Works: Tunnel, Crib
The Drainage Canal
Intersecting Sewers
Plan for North Shore Sewers

Street Problems

Lifting Chicago Out of the Mud

The Train of Cars F. W. P. Fast Freight

Playground Plan for F. W. P. Freight Cars

SCIENCE

Swamps in Chicago

Birds in Swamps: Red-winged Black-Bird; Yellow-headed Black-Bird,
Kingfisher; Snipe; Turnstone; Heron; Sora Rail; Wild Geese;
Wood-Duck, Loon

Swamp Life

Plant Life—Animal

Study of Type Trees

Elm; Pine; Maple; Oak; Willow; Poplar; Uses of Trees; Valuable Sap;
Seeds—Dissemination

Stories of Animals Concerned in Fur Trade

Beaver; Muskrat; Lynx; Badger; Bear; Wolf; Otter; Mink; Skunk;
Fox; Marten; Squirrel

Candles

Dips; Molds; Paraffin; Spermaceti; Wax; Tallow; Bayberry

Making Gas

How Gas Is Collected

How It Is Piped to House

How Made on Large Scale

Experiments with Water

Water Seeks Its Own Level

Purification by Distilling

GEOGRAPHY

Excursions to

Sand Dunes; Swamps; Lake Shore; Ridge; Harbor; on River

Sand and Relief Maps of United States

Sand and Relief Maps of Illinois

Sand and Relief Maps of Great Lakes

Trace Route Traveled by French

Trace Route Traveled by Mr. Kinzie

Trace Route Traveled by Captain Whistler

River Course (see details under "River Excursions" below)

Relation of Chicago River to Des Plaines and Illinois Rivers

Chicago Portage

Illinois and Michigan Canal

Drainage Canal

Harbor Problems

Cutting Channels through Sand Spit

Government Piers

Industries of City

Tanneries

Manufactories

Stockyards and Packing-Houses

Illinois Tunnel Company

Transportation:

Primitive and Modern (models of freight cars made by children in shop—
coal cars large enough for two children to ride in)

Imaginary Trips in These Cars to a Texas Cattle Ranch

To a Coal Mine in Illinois

East with Refrigerator Car (fresh meat)

To Minnesota (corn and wheat fields)

Visit to Flour Mills

Trip to Michigan for Lumber

Transportation on the Great Lakes:

Grain; Coal; Ore; Lumber, etc.

River Excursions:

River Course and Harbor

Government Piers

Harbor Lights

Slips

Life-saving Station

Warehouses

Factories

Electric Power Houses

Lake Sand Company

Tanneries

Lumber Yards

Office and Harbor Master

Fire Boats

Grain Elevators

Illinois and Michigan Canal

Drainage Canal

MAPS: Use large jig-saw map of United States. On the state of Texas, paste pictures of ranch life. On other states paste pictures of farms, wheat and corn fields, etc. Use muslin map of early Chicago to paste on pictures of early homes and buildings. Have large muslin map of modern Chicago to put on pictures of buildings of this period.

SERIES OF TWENTY LESSONS ON PIONEER TRANSPORTATION

I. PURPOSE

1. In a *large sense* to construct as vivid an image as possible of the life, hardihood, and inventiveness of the early pioneer, bringing home throughout the contrast of those early conditions with those of our modern civilization, and

holding up as an example to be admired the courageous, self-sufficient pioneer.

2. In a *smaller sense* to make the following historical points:

1) Why did people come west?

- a) Because soldiers returning from the War of 1812 brought news of fertile plains and unwooded prairies to their friends in the East
- b) Because of the ever increasing population that demanded an outlet

2) By what routes did they come west?

- a) Those previously traveled by Indians and hunters
- b) Those which crossed the mountains at the lowest points

3) How did people travel then?

- a) By side-wheel steamers and by rear-wheel steamers
- b) By Mackinac boats on small streams
- c) By packhorses
- d) By flatboats on the Ohio
- e) By prairie schooners, overland
- f) By ox-carts
- g) By sledges in winter

4) What did they carry with them?

- | | |
|---|--------------|
| a) Salt—why? | } Essentials |
| b) Flint and steel—why? | |
| c) Ax-head—why? | |
| d) Compass—why? | |
| e) A few cooking utensils | |
| f) Blankets—tent | |
| g) Such other articles as they had room for—the non-essentials—varying in size and quantity and quality according to individual preferences | |

5) What kind of men were they?

- a) Independent
- b) Self-reliant
- c) Courageous—enduring freezing cold weather
- d) Sagacious, able to tell direction when lost
- e) Fearless and strong

II. METHOD

1. In a *large sense* to let objects, rather than words, do the speaking. To substitute memorization of the above facts by an abundance of handwork of numerous varieties and in various mediums, letting the facts thereby gradually take hold through the activities, and the picture grow more clear and more permanent with each successive phase of the child's self-activity.
2. In a *smaller sense* to follow the plan of lessons outlined below.

MATERIALS

Lesson I: Why did people come west?

1. Ask questions and consider carefully each answer.
2. Show pictures of eastern as contrasted with pictures of western farm lands. Let children compare what is seen in each picture and draw their own conclusions as to which they would prefer and why. Which would a farmer prefer, and why?¹
3. Pass to sand tray to study topographical map. Show New England and the other colonies. Compare area with that of Mississippi plains.² Tell of continued immigration from across ocean. Point out fact that more children were being born constantly. Let children decide what would result and next how the congestion could be relieved. Point out horrors of the unexplored mountains, to give some idea of how much harder it was to cross those little humps of sand than they imagine. How could it be accomplished?
4. Return to seats and summarize either verbally or on paper.

Lesson II: How could people cross those mighty mountains that barred their path in every direction?

1. Consider carefully each answer. Ask questions.
2. Pass to sand tray. Ask children if any way looks easier to travel than the rest. Why?
3. Sprinkle white sand along main routes as the children indicate them, letting the sand represent people traveling west.
4. Also sprinkle white sand thickly over eastern portion at that time inhabited.

Lesson III: To fix in minds of children the routes discussed yesterday—

1. Run in slide³ giving relief map of the United States. Let children, with pointer, follow out same routes as yesterday. Discuss and discard poorer ones.
2. Retain the four main lines of travel. Repeat several times to fix in mind.
3. Take outline maps⁴ and mark with red these routes indicating portages by < < < < < <, and river travel by — — — — —.

Lesson IV: Tell first instalment of Mrs. Kinzie's journey from Detroit to Chicago in 1833, as given by herself in "Waubun."

Mrs. Kinzie travels through Lakes Erie and Huron to Mackinac on the "Henry Clay."⁵

Lesson V: To fix yesterday's story—

1. Let children recall story, smoothing out each other's difficulties, as they arise.

¹ Sand-map of United States, showing mountains and river valleys.

² Pictures of New England and of Illinois farms.

³ Stereopticon with slide of relief map of United States.

⁴ Plain outline map for each child.

⁵ Chalk map on board of Great Lakes on which to indicate her progress, using the following pictures: Indian village; Storm; Ox-cart; Steamboat.

2. Take out pads and pencils and write the story to put in their histories of Chicago.

Lesson VI: To revivify images and restock the imagination with fresh material after yesterday's writing—

1. Show slides¹ of early steamers, compare with modern steamers. Show picture of modern steamer to verify comparison.

2. Finish writing stories.

Lesson VII: Tell second instalment of Mrs. Kinzie's journey,² taking her from Mackinac to Green Bay in steamer, and from Green Bay to Fort Winnebago in a Mackinac boat rowed by a crew of French Canadians.

Give all the picturesque incidents possible (as taken from *Waubun*) to give scope and variety: enough to fasten something in each child's imagination.

Lesson VIII: To fix yesterday's work—

Write on board as children dictate the story, giving them full scope to criticize one another's mode of presenting the thing.³

Lesson IX: Continue yesterday's work. Finish story No. 2.⁴

Lesson X: To clarify images, paint pictures of Mackinac boat and camp fire made on side of river.

Show pictures again. Let children stand in approximate corners of boat to give idea of size.

Lesson XI: Tell the third instalment of the story, taking Mrs. Kinzie from Fort Winnebago to the Fox River Indian Village, where they were lost in a blizzard.

Work out divisions; choose parts.⁵

Lesson XII: To vary scheme, let children divide story into short stories and choose.

Write the parts chosen yesterday.

Lesson XIII: Finish writing stories.

Lesson XIV: Review.

1. Let children tell the story of Mrs. Kinzie's travels as a review, using the return of hitherto absent children as an excuse. Watch to see how much is digested; how much mere repetition.⁶

2. With this as background, tell last instalment of story, bringing her safely to Chicago.

¹ Lantern slides of early steamers, both rear and side-wheelers.

² Map on board as previously indicated, using following pictures: Camp at night; Rapids in river; and other pictures as given above.

³ Picture of Mrs. Kinzie in Mackinac boat which men are pulling over strong current.

⁴ Picture of Mrs. Kinzie approaching Fort Winnebago.

⁵ Map on board as before, leaving portion of journey so far traveled so as to compare distances covered by boat, horse, and Mackinac boat, also time used by each. Add following pictures: Indian trail; Night spent at fur trader's house.

⁶ Picture of horses fording streams.

3. Count symbols on map, indicating night encampments. Find that Mrs. Kinzie took eight and a half days to come from region near Madison. How many have been to Madison or Milwaukee? How long did it take?

4. Bring out reasons for length of time; also

(a) How to tell directions; (b) How foretell a storm; (c) How cut their way across frozen streams.

Lesson XV: Let children again divide and choose parts to write.

Lesson XVI: Paint picture of Mrs. Kinzie's party on horseback, going through woods and snow.¹

Lesson XVII: Give children opportunity to better their pictures if dissatisfied. Bring in clay horse to draw first on trial paper.

Lesson XVIII: Review.

1. Run slides through,² letting a child tell the story of each slide.

2. Bring out the various modes of conveyance used by Mrs. Kinzie. Which would children prefer?

3, 4. Work out whole length of journey, and then tell them how many hours it takes today.

Lesson XIX: Various routes.

1. Take out maps of routes and discover other routes of travel besides Hudson River-Great Lakes one.

2. How could men climb mountains?

3. How could men go down the Ohio River on other side? Easier or harder than going up Fox River?

4. Show model of Ohio flatboat.³ Compare with Mackinac boat. Why the difference?

5. Show slides of Ohio flatboats.⁴

Lesson XX: Prairie schooner as used on Cumberland Gap routes.

1. Trace third route on map. Surmise as to best conveyance after study of other routes.

2. Show prairie schooner slides and model.⁵ Why best fitted for that route?

[See outline of "Shop Work" in connection with "Transportation."]

The following story is the outcome of the preceding work. Parts of it were given verbatim from the children's dictation, and parts were rearranged by the practice teacher.

¹ New picture of the Kinzie party on horses lost in wilderness of snow.

² Lantern slides of the "Henry Clay" steamer; Ox-cart; Mackinac boat; Pack train.

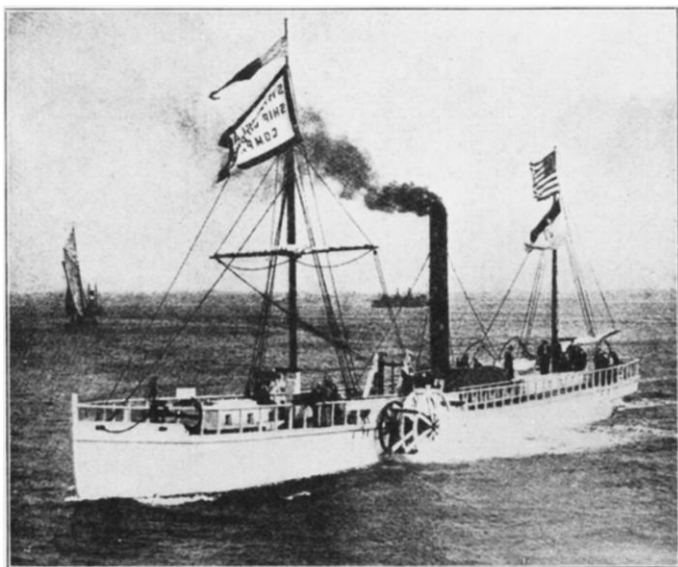
³ Model of flatboat made last year.

⁴ Slides of flatboat.

⁵ Model and slides of prairie schooner.

MR. AND MRS. KINZIE'S TRAVELING EXPERIENCES

The Mr. Kinzie that this story is about is the son of John Kinzie, the fur trader. This story is about him when he is married and grown up. Mr. and Mrs. Kinzie were in Detroit with some friends, and were listening to their stories about men that had been becalmed, and other people that had been caught in a storm. But they only laughed at these stories. They went down to the dock and were glad to see a beautiful boat. That is, to them it was beautiful. Their friends wished them a successful journey. The boat had two cabins. Its name was the "Henry Clay."



One of the cabins was for men, and the other for women. They had a nice journey for a little while, but after a while they struck a storm, and it began to get dark, and the rain began to come down in little streams from the roof in the ladies' cabin. They had to stand in a corner, and then the water began to come down there too. They had to climb in the berth, and for a while it was safe, but soon it began to leak there too. They at last went into the men's cabin. They told Mr. Kinzie and the other men about the awful time they had had, and they had to go into the berth again. There they kept dry. The next day they went on deck. They saw green shores, but no houses. Once in a while they saw an Indian tepee. Finally they got to Mackinac Island. They were happy to get out of the wet boat. The dock was full of Indians that were friendly to Mr. Kinzie. They smiled when they saw him, and said, "Bon jour, Monsieur John."

The Kinzies went from Mackinac Island to Green Bay in the "Henry Clay." It took them several days.

Mr. Kinzie was the agent for the Winnebago Indians. He was going to stop at Fort Winnebago to pay them for the land our government had bought from them. The Kinzies were going to take a Mackinac boat from Green Bay to Fort Winnebago. A Mackinac boat is oblong, and thirty feet long and about seven feet wide. In the middle of the boat a canvas is stretched over little poles. It looks like a little cabin. Mrs. Kinzie's piano was in a box under the canvas. Mrs. Kinzie was a musician, and she wanted to take her piano with her. They put a mattress over it and used it as a couch in the afternoons.



On each side of the boat there were French voyageurs and soldiers rowing, and the voyageurs sang songs to keep time with their oars.

Mr. Kinzie helped to row. He helped a soldier that seemed very weak and looked as if he had run away from home.

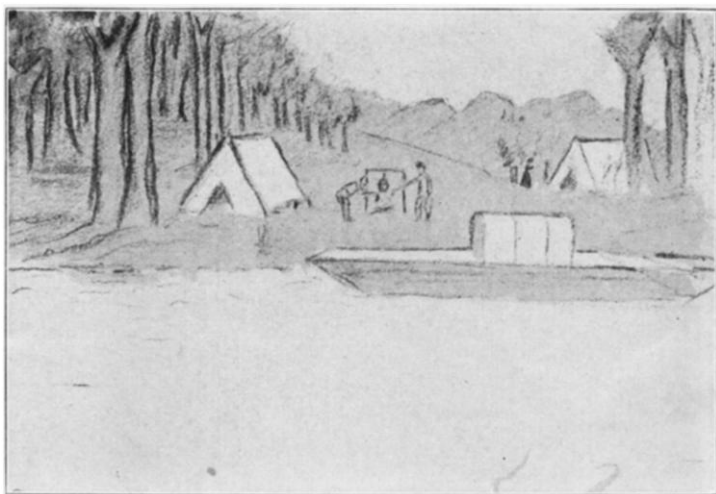
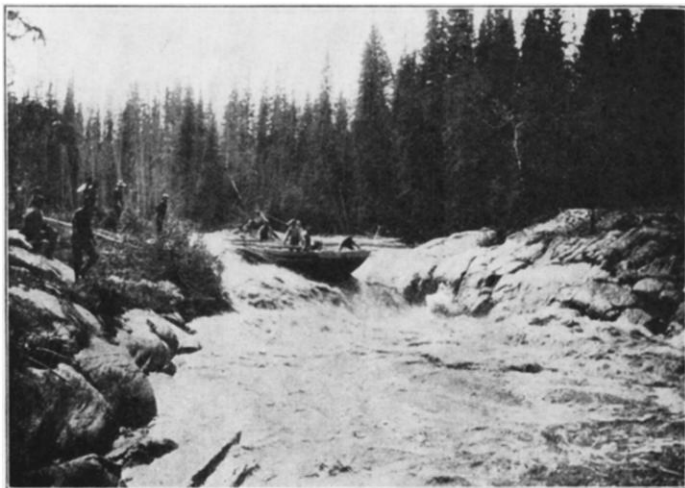
They came to many rapids, and the bourgeois would call, "Men overboard!" Then the men would have to jump out and pull the boat up the rapids. They were going against the current all this time, and it was very hard to row.

Sometimes the boat got stuck between two rocks, and the men had to get out and push it through. Sometimes the rapids were so swift that the men had to take everything out of the boat except the piano and carry it around. Sometimes they would have to pull the boat along with ropes.

The first night they stayed at Mr. Grignon's house, at Kakalin. The other nights they camped on the shore.

The Kinzies had one tent and the soldiers another. This was the first

time Mrs. Kinzie had ever been west and camped out of doors. They had a fire in front of the camp. Mrs. Kinzie thought it was very beautiful. She sketched a picture of the river, with the sun shining on it.



The French voyageurs cooked ham on sticks over the fire. They ate from tin plates and drank from tin cups. In the morning the bourgeois would call, "How, how, how!" as loud as he could, to wake the people for breakfast. After eight days of such traveling, they came to Fort Winnebago.

Mr. and Mrs. Kinzie lived at Fort Winnebago all that winter. In the spring, they decided to go to Chicago to see their mother and father. First they baked biscuits and boiled ham. They decided to go by packhorse. They took two men. One was named Plante, who was the guide; the other one was named Pierre Roy. Plante was supposed to know the way, but he did not. Mr. and Mrs. Kinzie each had a horse. They also took one packhorse. To the packhorse they tied several bundles of biscuits and their hams. Each one had a tin cup on his saddle bow. The men each had a piece of flint in their pocket, and a piece of steel. They planned to follow some Indian



trails. They took a tent so they could camp. Mrs. Kinzie had a hunting knife hung around her neck.

Behind the fort was a little creek, called Duck Creek. They carried their canoe on an ox-cart. When they came to the creek, they took the canoe off the cart and put it in the water. Then they put the trunk into the canoe. Mrs. Kinzie thought it would be best to sit on the trunk, but just as she got into the canoe some dogs jumped into her lap and upset the canoe.

Mrs. Kinzie got all wet. Mr. Kinzie had to carry her over on his shoulder. Mr. Kinzie asked her if she wanted to go back to the fort. She would not go. She rode all day in her wet clothes. It was growing cold, and she had on kid gloves, and her hands were swelling from the cold.

After they had ridden a long way, they found a place to put up their tent. They made a fire by striking flint and steel together. They put Mrs. Kinzie's coat near the fire to let it dry. It froze stiff. It looked like Mrs. Kinzie standing there.

For supper they had ham and biscuits. The biscuits were used as plates.

They cut the ham on the biscuits. They stirred their coffee with their knives.

Before they went to bed they tied their horses' front and back legs together so they could not run away. Then they rolled up in their blankets under the tent and were very comfortable.

While riding they sometimes saw one or two prairie wolves or deer, and the dogs would chase them away. Once in a while they came to an Indian village. The Indians came out and asked Mr. Kinzie for bread. But Mr. Kinzie did not dare give them any, because they hardly had enough for themselves. Mr. Kinzie told them so in their Indian language.



The second night they reached Mr. Morrison's house. They stayed there all night. Before leaving the next morning they asked for more biscuits. They were afraid their supply would run out.

The next day it snowed hard. Mr. and Mrs. Kinzie could hardly see the trail, but they went on. They had been told to keep on until they came to another trail, but they could not find it. Finally they made camp and had their supper and went to bed. It kept snowing. In the night the tent poles broke and the tent fell in on them from the weight of the snow. Mr. Kinzie had to cut new poles. In the morning they went on. Then Mr. Kinzie saw that Plante, the guide, did not know the way, so he took the lead. They did not eat much, because they hadn't much left.

Toward night they saw a fence. They were very happy, because they knew there must be a house near by. They asked what place it was. They found out it was Mr. Hamilton's house, the very place they had meant to reach. This shows what a good woodsman Mr. Kinzie was, and how well he could tell directions.

When they came to the Rock River, there was a ferry boat. It was just a little rowboat. A path was cut in the ice, so that the boat could run. It was sunset as they crossed. The sky was yellow and red, so was the streak of water where the ice was cut away. The horses swam across the river. That night they stayed at Mr. Dixon's house.

The next day they lost their trail. They wandered all day. Toward evening of the second day, Mrs. Kinzie's horse began to kick and jump and didn't want to go farther. Then Mrs. Kinzie knew there were Indians near, because her horse did not like them. Just then a little Indian dog ran out to meet them. Then they went behind the bushes and found two Indian squaws,



who were digging Indian potatoes. Mr. Kinzie asked the squaws where they were, but they did not know. Then Mrs. Kinzie asked where the squaws lived, and they said, "Across the river." Mr. Kinzie was glad, because he knew they must have a canoe there. He asked them if they had a canoe, and they said "Yes, but a very little one." So the squaws paddled them across, one at a time. On the other bank was an Indian village. Here they were able to get something to eat. It was the first they had eaten for two days. The master of the lodges guided them to the nearest cabin on the following morning. From here they knew the trail to Chicago. It took them eight and a half days to make the trip that it takes us only five hours to make.

The following stories, written by individual children, were used as reading lessons to summarize their study of the early methods of transportation.

THE LINCOLN FAMILY TRAVELING TO ILLINOIS

In a canvas-covered wagon the Lincoln family was traveling from Indiana to Illinois, with all the family possessions. A tall boy, very strong and thin, carried a long whip, which he used to guide four yoke of oxen. None of the people along the road thought he would some day be president. It took them fifteen days to get to Illinois. It was a long, hard trip. They came through muddy forest roads. It was spring, and the streams were high. When they reached Illinois and found a place that suited them, Lincoln and his cousin got to work. They cleared the ground, made a barn, built a cabin, and ploughed the land. When that was done, they split rails and made fences.



TRAVELING ON PACKHORSES

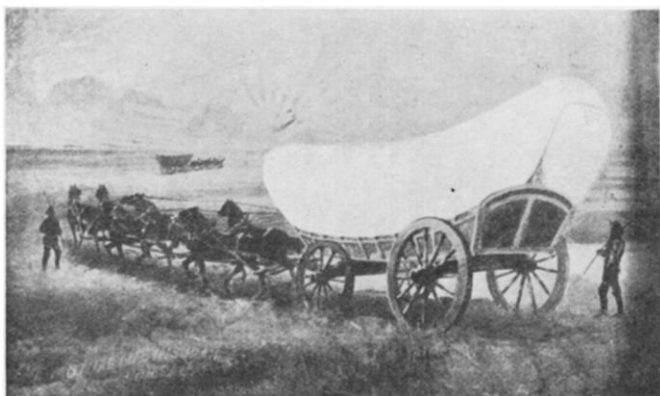
When all were comfortable, Lincoln left to work for himself. The first thing he did was to build a flatboat and go down the Mississippi River to New Orleans. That is where he saw how the slaves were treated. He had sympathy for them.

G. L.

A family was traveling from the East on packhorses to Chicago. Mr. King was walking in front with his dogs, and carried a rifle. His wife was riding horseback. Behind her on a horse were some pots and dishes and things that were needed for cooking. They did not take any meat with them. They only took salt and cornmeal, because Mr. King expected to get meat by shooting deer or wild turkey in the woods. There was a small path that they were following, which was called an Indian trail. Another horse was tied to the back of Mrs. King's saddle. One packhorse carried a rake, a piece of iron for a plough, and some small farm tools. These things did not have handles, except the hatchet which was used on their way to cut firewood. One horse

carried two baskets, one on each side. The baskets were filled with bed clothes, and in a hole in the middle sat the children. Other packhorses carried household goods. The hired man walked behind to see that nothing was lost, and he also kept the cattle together. G. S.

A tired party in two prairie schooners were going slowly along the lake shore on their way to Chicago. They had covered about 500 miles, having come from Buffalo. Three young men walked by the side of the wagon. Their clothes were spattered with mud and they looked as if they had more than once put their shoulders to the wheels. The roads were very bad, it



TRAVELING FROM BUFFALO

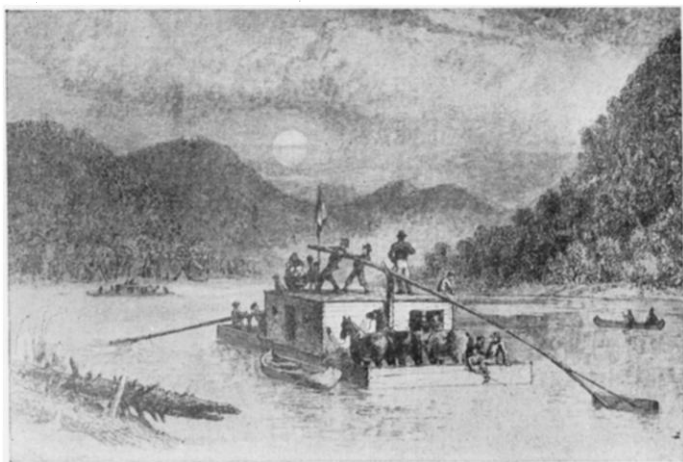
seemed as if they had been wading through one mud hole after another all day. The horses looked as if they were pretty well tired out. The lighter of the two wagons was drawn by one horse. The heavier wagon was drawn by two horses. They had just left a tavern and had forty-two miles to go before they could reach another. They were going along the lake shore near the sand. They unhitched two horses from the heavy wagon and had them pull the lighter wagon over to the shore. It was easier to pull there where the sand was hard. It was three o'clock in the afternoon before the large wagon overtook the other. The old horse could go no farther, in spite of all the urging he would not move another step. Then they decided to turn the old horse loose.

A storm was coming up, the sky looked threatening, and they decided to have supper, and camp for the night. They had hardly sat down when a heavy storm broke over their heads. They gathered all the food they could in the short time that they had, and jumped into the prairie schooners. The three young men got into the smaller wagon. They thought they had the best of it, because that wagon carried the mattresses and blankets. But

toward morning the cover blew off and they were drenched with rain before they got it back.

In the other schooner the people sat opposite each other and all were holding on to the cover to keep it from blowing away. The next morning they prepared breakfast; it was not easy to get because all the wood was saturated with water. They left the heavy wagon on the beach, with all in it that they could spare, and pressed on with the smaller wagon.

They had written to a friend in Chicago to meet them with some oxen and they were hoping that soon they would have the friend's help. That day the friend did meet them with the oxen. The two horses were almost dead, but



FLATBOATS

they were not so tired but that they could help the oxen. They all reached the tavern.

The next morning the three young men went back with the oxen and horses for the schooner that they had left behind. At night they were among the sand dunes and had to sleep in two inches of snow. They had some pine twigs at their heads and a roaring fire at their feet. They rolled up in blankets and slept soundly. They found the wagon the next night just as they left it. They ate flap-jacks and honey for supper, and altogether had a good time of it.

T. P.

Some of the people built flatboats and keel boats and came down the Ohio River. When they came to a place they liked they stopped. Sometimes they would take their boat to pieces and build their cabin out of it. If they wanted to go up the Mississippi River they took a rope and put it around a tree ahead of them and pulled the boat up to that tree. And they put the rope up the

next tree, and so on, up the river. They had to do this because they were going against the current. They would do this until they found a place where they wanted to stop. Sometimes they would go into the woods and cut down trees and build their houses.

J. F.



TRAVELING IN A SLEDGE



TRAVELING IN AN OX-CART

Long ago in winter people used to ride in sledges instead of sleighs. Oxen pulled the sledges.

M. P.

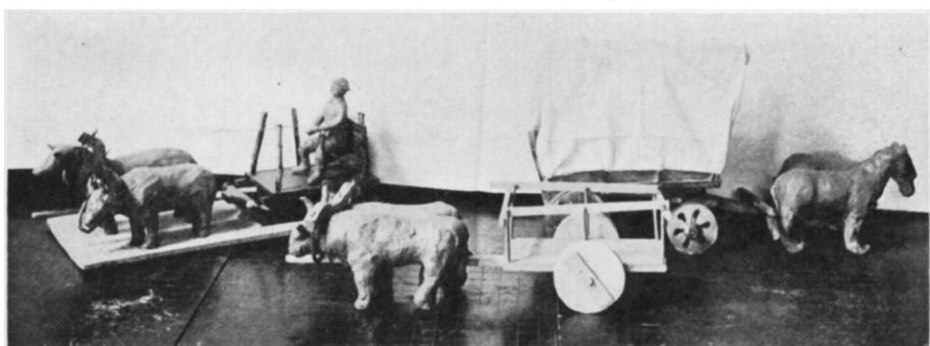
Mr. Beaubien came from Detroit in an ox-cart. He had an Indian to guide him. He got jolted around because they were following up an Indian trail and the cart didn't have any springs.

J. F.

The following is an outline of last year's third-grade shop work in connection with early transportation, under direction of Mr. Leonard W. Wahlstrom.

The struggles of the early pioneers to reach the West from the civilized communities of the East furnished motive for the handwork during part of the year.

Study of pictures and stories of travel furnished a basis for comparison of primitive methods of travel with our own modern means. Simple facts in mechanics and physics were brought out in class discussion of these pictures. The following types of vehicles were studied: prairie schooner, sledge, ox-cart,



flatboat. The following outline shows some of the points brought out in these discussions:

Prairie Schooner

a) High wheels—roll over stones and rough ground better than smaller wheels. Makes possible fording of streams.

b) Wide rims—do not sink into soft ground; cf. coal wagons on city streets, city ordinance requiring wide tires.

c) Hubs—bigger and longer; give more bearing surface on axle causing less wear where it “rubs.” “Rubs”=friction. In narrow hub all the wear due to load coming on shorter space on axle; therefore more wear. Trace load from wagon box to ground through axle and wheels. What used to reduce friction? Oil, grease. Is friction a good thing or bad? Sometimes good; cf. brake shoe on wheel, drag shoe and chain. Friction in walking—wears shoes. Why slip when walking on ice? No friction.

Sledges

Wooden runners more friction than steel and iron. Eskimos use walrus bone. Ice less friction than snow. Cf. lumber roads in north sprinkled to make ice. Compare flat iron with round iron on sleds. Which best? Why?

Ox Cart

Compare ox-cart with prairie schooner. Ox-cart=product of primitive community. No shops, few tools, etc. Prairie schooner=product of civilized community. Skilled workers, shops, many tools, etc. Ox-cart wheel, solid, heavy; good only for short distance. Prairie schooner wheel, lighter, stronger; better for long distance. Ox-cart wheel solid; two side braces give strength and greater bearing surface on axle; reduces cutting action on axle but increases friction.

The Wheel

Trace evolution of wheel:

1. Indian drag; two poles tied to horse.
2. Roller; log connecting end of poles.
3. Roller; hollowed out to give two rough wheels; wheels and axle turn together.
4. Separate wheels—sections of log.
5. Wheel built up; hub, spokes, rim, tire.
6. Railway wheel and axle joined in one. A return to primitive roller type. Why?

For a description of another year's work in the Wood Shop in connection with modern transportation, which consisted in the making of a small freight train, see an article in *Elementary School Teacher*, September, 1908. The next year a train consisting of larger cars (4 ft.×1 ft.) was begun. It was intended to use these cars in transporting the crops from the garden. The tops of the refrigerator, box, and furniture cars were on hinges, but the coal cars had seats (two in each car) in which the children might ride. Although the tracks and trucks have not yet been made so that the cars can be of permanent use, still, the children have had sufficient pleasure in making and using them to more than justify their work upon them.